Security Water and Sanitation Districts / Enterprises
231 SECURITY BLVD. • COLORADO SPRINGS, COLORADO 80911
TELEPHONE 719-392-3475 • FAX 719-390-7252
www.securitywsd.com

October 1, 2013

Mr. Kevin Reidy
Office of Water Conservation and Drought Planning
Colorado Water Conservation Board
Department of Natural Resources
1313 Sherman St., Room 721
Denver, CO 80212

Dear Kevin:

Enclosed please find a Water Conservation Implementation Grant application submitted on behalf of the Security Water District. I look forward to working with the Colorado Water Conservation Board on this important project.

If there is any additional information that I can provide to help facilitate this application, please let me know.

Sincerely,
Security Water District

Roy E. Heald

Roy E. Heald, General Manager

WATER EFFICIENCY GRANT PROGRAM

WATER CONSERVATION IMPLEMENTATION GRANT APPLICATION

October 1, 2013

Submitted to:

Colorado Water Conservation Board

Office of Water Conservation and Drought Planning

Submitted by:

Security Water District

A Covered Entity

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Summary

This is a water conservation implementation grant application submitted by the Security Water District (a covered entity) to the Colorado Water Conservation Board, Office of Water Conservation and Drought Planning. The Security Water District wishes to improve water loss management and control procedures in our service area. The first step in this process is to implement an AWWA M36 water audit which involves an audit of water supply and meter data. Security Water District intends to contract with the WaterDM team which includes Water Matters! and Water Systems Optimization (WSO) to conduct the audit and provide recommendations for additional actions Security might take to reduce system water loss.

The total budget for conducting the Water Loss Control audit is $26,210. The proposed budget does not include time or money for preparing this grant application. This proposal requests a planning grant from the CWCB in the amount of $17,825, which is 100% of the total consulting services budget. Security Water District will contribute $8,385 in in-kind services (32% of total plan development budget) through provision of time and data during the water audit process. A detailed hour and dollar budget follows as Attachment A.

Assuming that grant funding can be provided in a timely manner, the water loss control audit, summary, and recommendations will be completed by March 2014. The time line follows as Attachment B.

CWCB Water Conservation Implementation Grant Application Submittal Requirements

1. Name and contact information of entity seeking grant:

Security Water District

Applicant: Security Water District
231 Security Boulevard
Colorado Springs, CO 80911

Contact: Roy Heald, General Manager
719-392-3475
Roy.heald@swd.com

2. Selected firm and individuals to assist in development of the Water Conservation Plan:

The Security Water District has selected Peter Mayer, P.E. Principal of WaterDM to conduct and manage the project along with subcontractors Linda Firth of Water Matters! and Reinhard Sturm of Water Systems Optimization to conduct the water loss control audit and prepare recommendations. The individuals listed below will assist in the completion of this project. The role of each individual is briefly described.

Individual, Title, and Organization	**Role**
Roy Heald, Manager, Security Water District	Project manager and primary point of contact for the City
Peter Mayer, P.E., Principal, WaterDM	Project manager, water loss control auditor, report preparation
Linda Firth, Water Matters!	Technical liaison, audit review, report preparation, and primary point of contact with Security
Reinhard Sturm, Water Systems Optimization	Technical review of and input on Water Loss Control Audit and recommendations for future action
Dian White, Assistant Manager, Security Rick Davis, Distribution Manager, Security	Provision of data, project oversight and supervision, water loss audit review.

3. Identification of retail water delivery and sources of water of the covered entity for past five years

Water Delivery by Customer Type, 2008 through 2012					
	Residential S/F	Residential M/F	Commercial	Other	Total Billed
2008	929,184,351	22,123,437	77,432,029	77,432,029	1,106,171,847
2009	778,044,536	18,524,870	64,837,045	64,837,045	926,243,495
2010	849,863,006	20,234,833	70,821,917	70,821,917	1,011,741,674
2011	822,736,551	19,588,966	68,561,379	68,561,379	979,448,275
2012	898,986,138	21,404,432	74,915,512	74,915,512	1,070,221,593

The District obtains its water supply from numerous wells located in the vicinity of its service area, supplemented by Fryingpan/Arkansas Project water delivered through the Fountain Valley Conduit. The District's water rights include a complex system of decrees, well permits, agreements and leases, including:

- Wells in the Widefield Aquifer and the Windmill Gulch Aquifer
- Fryingpan/Arkansas water and return flows from this water

Augmentation plans using senior water rights and Fryingpan/Arkansas return flows to replace depletions associated with operation of wells in Widefield and Wndmill Gulch Aquifers
Water Rights being developed by Security for artificial recharge of the Widefield Aquifer
Water rights being developed by Security for storage in Pueblo Reservoir and delivery through the Southern Delivery System

A summary of water supply currently available to Security on a firm annual basis follows:

- Fryingpan/Arkansas Project Water 1,564 acre feet
- Widefield Aquifer Wells 2,577 acre feet
- Windmill Gulch Wells 240 acre feet
- Leased Clear Springs Ranch Wells 600 acre feet
- **Total** **4,981 acre feet**

Security Water District treats water from its wells in three plants. Fryingpan/Arkansas (surface) water is treated by the City of Colorado Springs. About 2/3 of the District's water is groundwater, one third is surface.

4. Reasonable engineering estimate of future annual retail demand for the next five years

Security's reasonable engineering estimate of future annual retail demand for the next five years is shown in the table below:

Year	Projected Population	Projected AF Demand
2014	19,793	3,413
2015	20,190	3,481
2016	20,614	3,554
2017	21,012	3,623
2018	21,327	3,677

5. Background characterizing the water system, potential growth and any other pertinent issues that relate to the stated evaluation criteria.

Security Water District population, system per capita demands

Year	2006	2007	2008	2009	2010	2011	2012
Population	17,607	17,758	17,872	18,070	18,335	18,680	19,077
System per capita water use (gallons)	167	154	197	157	165	160	166

a) Current and Past Per Capita Demand. Per capita demand is calculated by dividing total water deliveries by service area population.

b) Past and Present Population and Forecast. The population in Security's service area from 2007– 2012 is presented in the table above. Security's population is expected to reach 21,012 by 2017, which represents an additional 1,935 people. This is a 10% increase in population over 2012. Population is based on the 2010 Pikes Peak Area Council of Governments study, projected increases for the District are based on historic average tap increases.

c) Estimated Water Savings to be Achieved by Implementation. This project will not save "wet water" by itself, but rather establishes the foundation for future water savings by improving Security's understanding of water losses in the supply system and identifying how these losses can be best addressed and managed in the future. Security currently estimates that its unaccounted for water is an average of 10 to 14 percent per year. However, monthly spikes in water loss appear to be in excess of 25%. Security hopes to improve understanding of water loss in its service area through this process and to better understand if water losses are largely real or apparent.

d) Adequacy, Stability, and Reliability of Water System. The Security Water District have adequate water resources to meet water demands through 2020 and beyond. The firm yield numbers shown earlier indicate that current supply is adequate until 2028. By 2016, the District expects to realize and additional 900 acrefeet of water from the Southern Delivery System, extending supply another twenty years or so, given the current rate of growth.

6. How will Grant Program monies be used?

The detailed scope of work below describes how the grant monies will be used to complete the Water Loss Control Audit and recommendations for the Security Water District.

Scope of Work

In the project the consulting team of WaterDM, Utility Management Consulting, and WSO will use the IWA/AWWA Water Audit Method published in the AWWA Manual of Practice M36 to conduct a "top down approach" desktop water audit for the Security Water District. The results of the desktop audit will be reviewed by international water loss expert Reinhard Sturm of WSO. A staff member from WSO will come to Colorado to meet with Security staff and the consulting team to discuss the findings of the audit and to establish recommendations to Security for next steps that can be taken to improve water loss control and management.

The **key deliverables** of this project will be:

1. Completed desktop water audit using the free AWWA Water Loss software (which is an Excel-based spreadsheet tool)
2. Brief report outlining the findings of the water audit and presenting recommendations for next steps that Security can take to improve water loss management and control.
3. 50% and 75% completion reports and final report submitted to CWCB in accordance with grant requirements.

Task 1 – Conduct Desktop Water Audit

The utility water auditing process that will be implemented in this project is an internationally recognized tool for improving understanding and management of water loss, considered a best practice by the American Water Works Association. The water audit provides crucial information to water utility that enables effective water loss control measures to be implemented in the future.

Through the water loss auditing process, the Security Water District will work with the WaterDM consulting team to quantify consumption and losses that occur in the distribution system and the management process of the utility.

The "top down" or desktop audit approach is the recommended first step for a water utility following the AWWA M36 procedures, and the AWWA Water Loss Control Committee has developed a truly useful and free auditing software built as an Excel spreadsheet.

Task1.1 Preliminary Meeting

Peter Mayer and Linda Firth will meet with Roy Heald and his staff from Security to launch the project. At the meeting the team will review the project goals and scope of work, the project schedule, and will provide a list of the data input requirements for the desktop audit.

The essential component of the M36 water audit approach is the water balance calculation that provides a preliminary assessment of water loss. Through this process, water system input volume is divided into two fundamental categories: authorized consumption and losses. The summary results from the water balance portion of the water audit compares distribution system input volume with the sum of customer consumption and losses (estimated or known).

Task 1.2 Data Gathering
Security staff will provide the WaterDM team with the reports and data necessary to complete the desktop audit. It is in this task that Security will contribute in-kind value to the project.

Task 1.3 Desktop Audit
Peter Mayer will prepare the preliminary desktop audit using the data provided by Security. Next Peter Mayer and Linda Firth will conduct a working session with Security staff to review the preliminary audit, obtain additional information from Security staff, and finalize the initial audit. Once Security and the consulting team have reviewed and approved the desktop audit draft, the technical review can commence.

Task 2 – Technical Review and Meetings with WSO
Reinhard Sturm, an internationally recognized water loss control expert and Vice President of Water System Optimization will review the Security was loss control audit prepared by WaterDM. Reinhard or a member of his staff will travel to Colorado to meet with Security and WaterDM. In a half day workshop, this group will develop recommendations for future action that can be taken to mitigate water loss and to improve utility water loss management in the Security WSD.

Task 3 – Report Preparation
WaterDM will prepare a brief report (5 – 10 pages) summarizing the findings of the water loss control audit and explaining the recommendations for future action. Linda Firth will review and provide input to the final report and it will be submitted to Security. Security's comments and edits will be incorporated into the final report.

WaterDM and Security will prepare 50% and 75% completion reports in addition to the final report as required by CWCB.

7. How will the Water Loss Control project be monitored to ensure results?

Results of this project can be monitored through the work products themselves – the completed Excel audit and the final recommendations and report.

Security will evaluate the recommendations of the project and determine how best to proceed with water loss control in their district.

8. Signature with authority to commit resources for the Security Water District

This grant application is approved and submitted by the Security Water District by

Roy E. Heald 10-1-2013

Roy E. Heald, District Manager

Water Conservation Implementation Grant Budget Attachment A - Security Water District

Work Items	Consultant							Security Water District								CWCB Grant Request	Total Project Cost
	Peter Mayer DM		Linda Firth - WM!		Reinhard Sturm - WSO		Total Consultant	Roy Heald		Dian White		Rick Davis		Total Inkind			
	Hrs/$150	Subtotal	Hrs/$150	Subtotal	Hrs/$185	Subtotal	Cost	Hrs/$165	Subtotal	Hrs/$165	Subtotal	Hrs/$150	Subtotal				
Task 1 - Conduct Desktop Water Audit																	
1.1 Preliminary Meeting	6	$ 900	4	$ 600			$ 1,500	2	$ 330	2	$ 330	2	$ 300	$ 960	$1,500	$ 2,460	
1.2 Data Gathering	6	$ 900	4	$ 600			$ 1,500	2	$ 330	4	$ 660	4	$ 600	$ 1,590	$1,500	$ 3,090	
1.3 50% completion report to CWCB	2	$ 300	2	$ 300			$ 600	1	$ 165		$ -		$ -	$ 165	$600	$ 765	
1.3 Desktop Audit	20	$ 3,000	4	$ 600			$ 3,600	15	$ 2,475	5	$ 825	5	$ 750	$ 4,050	$3,600	$ 7,650	
1.4 75% completion report to CWCB	2	$ 300	1	$ 150			$ 450	1	$ 165		$ -		$ -	$ 165	$450	$ 615	
Subtotal	**36**	**$ 5,400**	**15**	**$ 2,250**			**$ 7,650**	**21**	**$ 3,465**	11	**$ 1,815**	**$ 11**	**$ 1,650**	**$ 6,930**	**$7,650**	**$ 14,580**	
																$ -	
Task 2 - Technical Review Meetings with WSO	16	2400	8	1200	25	$ 4,625	$ 8,225	5	$ 825	2	$ 330	2	$ 300	$ 1,455	$8,225	$ 9,680	
Subtotal	**16**	**$ 2,400**	**8**	**$ 1,200**	**25**	**$ 4,625**	**$ 8,225**	**5**	**$ 825**		**$ 330**	2	**$ 300**	**$ 1,455**	**$8,225**	**$ 9,680**	
																$ -	
Task 3 - Final Report Preparation	8	$ 1,200	5	$ 750			$ 1,950								$1,950	**$ 1,950**	
Subtotal	**8**	**$ 1,200**	**5**	**$ 750**			**$ 1,950**								**$1,950**	$ 1,950	
TOTAL	**60**	**$ 9,000**	**28**	**$ 4,200**		**$ 4,625**	**$ 17,825**	**26**	**4290**	**11**	**2145**	**13**	**1950**	**$ 8,385**	**$17,825**	**$ 26,210**	
District inkind contribution equals 32%																	

Appendix B - Timeline

Grant application submitted to CWCB for approval	1/6/2014
CWCB approves grant, issues PO	2/3/2014
Preliminary Meeting	2/14/2014
Data gathering	2/28/2014
50% completion report to CWCB	3/17/2014
Desktop Audit	3/24/2014
75% Completion Report to CWCB	4/15/2014
Technical Review Meetings with WSO	4/30/2014
Final Report Preparation	5/15/2014